

REMARKS

Claim 15 stands rejected under 35 USE 103 over Clarino et al in view of Bruder et al.

The subject matter of claim 15 is a method of cutting a sheet-form piece of metal into smaller pieces by using a camera means and a controllable cutting apparatus. In accordance with claim 15, the camera means records an image of the sheet-form piece of metal, located on a cutting surface. The image is used to provide information regarding outlines of the sheet-form piece to a positioning system, and the positioning system places a desired number of instances of at least one type of small part within an area bounded by the outlines of the piece. The piece located on the cutting surface is cut into parts under control of a control system in accordance with cutting paths established by the positioning system.

By using a camera means to record the image of the piece on the cutting surface, the image is recorded without need for the cutting surface itself to have a special structure relating to the technique for recording the image. Accordingly, the metal piece can be cut while on the cutting surface, for example using a numerically controlled thermal cutting machine (claim 19), without regard to the possibility of damaging the cutting surface.

Clarino et al discloses a pattern alignment and cutting system for cutting garment pattern segments from limp sheet material, i.e. soft materials such as hide and fabric, for the purpose of making garments or other fabric articles. Certain predetermined patterns are provided and each pattern comprises a plurality of pattern segments that have preferred locations 28 (FIG. 4) in a pattern marker. A hide 24 is placed on a cutting table (FIG. 3) and the hide perimeter is recorded by manually moving a digitizing puck 25 over the surface of the cutting table along the perimeter of the hide. In this manner, a digital image of the hide perimeter is created and stored. It will be noted that the cutting table has a special structure ("Preferably, the

table has a digitizing capability with sensors (not shown) underlaying the table surface..."). The operator also uses the digitizing puck to record a perimeter outline 26 for defects 27 in the hide. The pattern marker is then placed over the image of the hide (including the defects) and the system disclosed by Clarino may then reposition one or more of the pattern segments in the marker to avoid the defects. When the garment pattern segments are satisfactorily positioned, a cutting tool is used to cut the hide in place, i.e. while on the cutting table (column 6, lines 12-13).

The examiner has acknowledged that Clarino et al does not disclose use of a camera means for recording an image of the hide on the cutting table. Instead, the examiner asserts that Bruder et al discloses a camera means as equivalent structure to the digitizing puck and asserts that it would have been obvious in view of Bruder et al to employ a camera means in the system disclosed by Clarino et al.

Bruder et al discloses a method for cutting pieces from limp sheet material. A skin 3 is placed on a pallet 2 which is placed on a laying table 1 over which a camera 5 is located. The camera 5 is used to detect defects in the skin 3. Different types of cameras can detect different types of defects, as discussed in column 4 of Bruder et al. When the defects have been identified, the pallet is moved to a cutting table on which the cutting takes place.

The examiner asserts that Clarino et al discloses the method substantially as claimed. As essential element of the method as claimed is that the piece that is placed on the cutting surface and is subsequently cut into parts under control of the control system is a sheet-form piece of metal. Although reference to the piece being a sheet-form piece of metal is found in the preamble of the claim, the feature must nevertheless be given weight in determining whether the claimed subject matter is patentable because a method is defined just as much by the material on which it operates as by the operative steps. Therefore, although the

examiner might legitimately assert that Clarino et al discloses placing a piece to be cut on a cutting surface, Clarino et al does not disclose placing a sheet-form piece of metal on a cutting surface. Claim 15 has been amended to emphasize that the piece that is placed on the cutting surface and is cut into parts is a sheet-form piece of metal. Bruder et al does not cure the deficiency in the disclosure of Clarino et al and therefore applicant submits that the subject matter of claim 15 is not disclosed or suggested by Clarino et al and Bruder et al, whether taken singly or in combination. Therefore, claim 15 is patentable and it follows that the dependent claims 16-22 also are patentable.

The examiner relies on Scott in support of the rejections of claims 19 and 22. Scott discloses a laser cutter for cutting a metal workpiece. However, the examiner has not explained why it would have been obvious to a person of ordinary skill in the art to apply the teaching of Scott, relating to a machine tool for cutting metal sheet material, to the pattern alignment and cutting system of Clarino et al, used during a garment development process that is applied to limp sheet material. Applicant therefore submits that claims 19 and 22 are patentable independently of claim 15.

Respectfully submitted,



John Smith-Hill  
Reg. No. 27,370

SMITH-HILL & BEDELL, P.C.  
16100 N.W. Cornell Road, Suite 220  
Beaverton, Oregon 97006

Tel. (503) 574-3100  
Fax (503) 574-3197  
Docket: AWEK 3167